

U.S. Patent Application 10/534,583

Proposed Amended Claim Set

~~PROPOSED~~ AMENDED CLAIM SET

1.-17. (Canceled)

18. (Currently Amended) A modified sarcosine oxidase which is a protein comprising an amino acid sequence of SEQ ID NO: 1 in which ~~at least~~ valine at position 94 of SEQ ID NO: 1 is substituted with a different amino acid, and in which optionally at least one amino acid at a position selected from the group consisting of positions 82 to 92 and 354 to 366 of SEQ ID NO: 1 is substituted with a different amino acid, wherein the protein has sarcosine oxidase activity and a lowered action on L-proline compared with a sarcosine oxidase of SEQ ID NO: 1.

19.-26. (Canceled)

27. (Previously Presented) The modified sarcosine oxidase of claim 18, wherein valine at position 94 of SEQ ID NO: 1 is substituted with glycine.

28.-42. (Canceled)

43. (Currently Amended) The modified sarcosine oxidase of claim 18, wherein at least one amino acid ~~in a region corresponding to~~ at a position selected from the group consisting of positions 82 to 92 or positions and 354 to 366 of SEQ ID NO: 1 is substituted with a different amino acid.

44. (Currently Amended) ~~The~~ A modified sarcosine oxidase ~~of claim 18, which is a protein comprising an amino acid sequence of SEQ ID NO: 1 in which valine at position 94 of SEQ ID NO: 1 is substituted with a different amino acid, and in which optionally~~ wherein at least one amino acid at a position selected from the group consisting of a region corresponding to positions 89, 155, 166, 204, 213, 233, 240, 250, 322, and 364 of SEQ ID NO: 1 is substituted with a different amino acid, wherein the protein has sarcosine oxidase activity and a lowered action on L-proline compared with a sarcosine oxidase of SEQ ID NO: 1.

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45. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein lysine at position 89 is substituted with arginine.

46. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein cysteine at position 155 is substituted with isoleucine.

47. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein asparagine at position 166 is substituted with lysine.

48. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein methionine at position 204 is substituted with alanine.

49. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein serine at position 213 is substituted with proline.

50. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein cysteine at position 233 is substituted with serine.

51. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein asparagine at position 240 is substituted with tyrosine.

52. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein glutamic acid at position 250 is substituted with glutamine.

53. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein lysine at position 322 is substituted with arginine.

54. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein alanine at position 364 is substituted with valine.

55. (Currently Amended) The modified sarcosine oxidase of claim 18, wherein the protein consists of the amino acid sequence of SEQ ID NO: 1 in which optionally at least one amino acid ~~in a region corresponding to~~ at a position selected from the group consisting of

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positions 82 to 92 ~~or~~ and positions 354 to 366 of SEQ ID NO: 1 is substituted with a different amino acid.

56. (Currently Amended) The modified sarcosine oxidase of claim ~~18~~ 44, wherein the protein consists of the amino acid sequence of SEQ ID NO: 1 in which optionally at least one amino acid at a position selected from the group consisting of ~~a region corresponding to~~ positions 89, 155, 166, 204, 213, 233, 240, 250, 322, and 364 of SEQ ID NO: 1 is substituted with a different amino acid.

57. (Previously Presented) The modified sarcosine oxidase of claim 56, wherein lysine at position 89 is substituted with arginine, cysteine at position 155 is substituted with isoleucine, asparagine at position 166 is substituted with lysine, methionine at position 204 is substituted with alanine, serine at position 213 is substituted with proline, cysteine at position 233 is substituted with serine, asparagine at position 240 is substituted with tyrosine, glutamic acid at position 250 is substituted with glutamine, lysine at position 322 is substituted with arginine, and/or alanine at position 364 is substituted with valine.

58.-62. (Canceled)

63. (New) The modified sarcosine oxidase of claim 18, wherein the protein comprises the amino acid sequence of SEQ ID NO: 1 in which valine at position 94 of SEQ ID NO: 1 is substituted with a different amino acid.

64. (New) The modified sarcosine oxidase of claim 63, wherein valine at position 94 of SEQ ID NO: 1 is substituted with glycine.